SEQUENCE LISTING

<110> Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V.

<120> Means and methods for modulating stomata characteristica in plants

<130> C1748PCT

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<170> PatentIn Ver. 2.1

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 1               5                  10                  15

tct tct tcg tca gag atc ctg cag aag cag act tac att gtt cag ctt   96
Ser Ser Ser Ser Glu Ile Leu Gln Lys Gln Thr Tyr Ile Val Gln Leu
            20                  25                  30

cat cct aat agc gaa acc gct aaa acc ttt gcc tca aag ttt gat tgg  144
His Pro Asn Ser Glu Thr Ala Lys Thr Phe Ala Ser Lys Phe Asp Trp
        35                  40                  45

cat ctt tct ttt ctc caa gaa gcg gtt tta ggt gtt gaa gaa gaa gag  192
His Leu Ser Phe Leu Gln Glu Ala Val Leu Gly Val Glu Glu Glu Glu
    50                  55                  60

gaa gag cct tct tct cga ctt ctc tac tcc tat ggc tct gcg att gaa  240
Glu Glu Pro Ser Ser Arg Leu Leu Tyr Ser Tyr Gly Ser Ala Ile Glu
65                  70                  75                  80

gga ttt gct gct cag ttg act gaa tca gaa gcc gag ata ctg aga tat  288
Gly Phe Ala Ala Gln Leu Thr Glu Ser Glu Ala Glu Ile Leu Arg Tyr
                85                  90                  95

tca cct gaa gtt gtt gca gtg aga cct gac cat gtt ctt cag gtt caa  336
Ser Pro Glu Val Val Ala Val Arg Pro Asp His Val Leu Gln Val Gln
            100                 105                 110

acc act tac tct tac aag ttc ttg gga ctc gac ggt ttt gga aac tcc  384
Thr Thr Tyr Ser Tyr Lys Phe Leu Gly Leu Asp Gly Phe Gly Asn Ser
        115                 120                 125

ggt gta tgg tct aaa tct cgg ttt ggt caa ggc aca att atc ggc gtg  432
Gly Val Trp Ser Lys Ser Arg Phe Gly Gln Gly Thr Ile Ile Gly Val
    130                 135                 140

ctt gat act gga gtt tgg cct gaa agt cct agc ttt gac gat acc gga  480
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Leu Asp Thr Gly Val Trp Pro Glu Ser Pro Ser Phe Asp Asp Thr Gly
145                 150                 155                 160

atg cct tcg att cca cgg aaa tgg aaa ggg att tgc caa gaa gga gaa   528
Met Pro Ser Ile Pro Arg Lys Trp Lys Gly Ile Cys Gln Glu Gly Glu
                165                 170                 175

agt ttc agt tct tcg agc tgt aac cgg aag cta atc ggt gct aga ttc   576
Ser Phe Ser Ser Ser Ser Cys Asn Arg Lys Leu Ile Gly Ala Arg Phe
            180                 185                 190

ttc atc aga gga cac cgt gtc gct aat tca cca gag gaa tca cca aac   624
Phe Ile Arg Gly His Arg Val Ala Asn Ser Pro Glu Glu Ser Pro Asn
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atg cct cgt gaa tac att tcc gca aga gat tca acg gga cac ggg act   672
Met Pro Arg Glu Tyr Ile Ser Ala Arg Asp Ser Thr Gly His Gly Thr
    210                 215                 220

cac acc gcc tca aca gtt ggt gga tcc tct gtt tcg atg gcg aat gtt   720
His Thr Ala Ser Thr Val Gly Gly Ser Ser Val Ser Met Ala Asn Val
225                 230                 235                 240

ctt ggc aat gga gct ggt gtg gct cgt ggg atg gct cct gga gct cac   768
Leu Gly Asn Gly Ala Gly Val Ala Arg Gly Met Ala Pro Gly Ala His
                245                 250                 255

att gca gtc tat aaa gtc tgt tgg ttc aat ggt tgt tac agc tct gac   816
Ile Ala Val Tyr Lys Val Cys Trp Phe Asn Gly Cys Tyr Ser Ser Asp
            260                 265                 270

att cta gca gct ata gat gta gcg att caa gat aaa gtc gat gtt ctt   864
Ile Leu Ala Ala Ile Asp Val Ala Ile Gln Asp Lys Val Asp Val Leu
        275                 280                 285

tcg ctt tcc ctt ggc ggt ttc cct att cct ttg tat gat gac aca atc   912
Ser Leu Ser Leu Gly Gly Phe Pro Ile Pro Leu Tyr Asp Asp Thr Ile
    290                 295                 300

gcc att gga aca ttc cga gcc atg gaa cgc ggt ata tct gta atc tgt   960
Ala Ile Gly Thr Phe Arg Ala Met Glu Arg Gly Ile Ser Val Ile Cys
305                 310                 315                 320

gca gct ggt aac aac ggt cca atc gaa agc tct gtt gca aac aca gct  1008
Ala Ala Gly Asn Asn Gly Pro Ile Glu Ser Ser Val Ala Asn Thr Ala
                325                 330                 335

cct tgg gtc tca acc att ggc gca ggc acg ctt gat cga aga ttt ccc  1056
Pro Trp Val Ser Thr Ile Gly Ala Gly Thr Leu Asp Arg Arg Phe Pro
            340                 345                 350

gct gtg gtc aga tta gcc aac gga aag ctt ctc tat gga gag tca ttg  1104
Ala Val Val Arg Leu Ala Asn Gly Lys Leu Leu Tyr Gly Glu Ser Leu
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Tyr Pro Gly Lys Gly Ile Lys Asn Ala Gly Arg Glu Val Glu Val Ile
    370                 375                 380

tac gtc aca gga gga gat aaa gga agt gag ttc tgt ttg aga ggg tca  1200
Tyr Val Thr Gly Gly Asp Lys Gly Ser Glu Phe Cys Leu Arg Gly Ser
385                 390                 395                 400
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ctt cca aga gaa gaa atc cga ggc aaa atg gtg att tgt gat cgc gga   1248
Leu Pro Arg Glu Glu Ile Arg Gly Lys Met Val Ile Cys Asp Arg Gly
                405                 410                 415

gtc aat gga aga tcg gag aaa gga gaa gcg gtt aaa gaa gct gga gga   1296
Val Asn Gly Arg Ser Glu Lys Gly Glu Ala Val Lys Glu Ala Gly Gly
            420                 425                 430

gtt gca atg atc tta gcc aat aca gag atc aac caa gaa gaa gat tct   1344
Val Ala Met Ile Leu Ala Asn Thr Glu Ile Asn Gln Glu Glu Asp Ser
        435                 440                 445

att gac gtt cat ctc tta cca gct aca ttg att ggt tac act gag tca   1392
Ile Asp Val His Leu Leu Pro Ala Thr Leu Ile Gly Tyr Thr Glu Ser
    450                 455                 460

gtc ctt ctg aag gct tat gtt aat gcc acg gtg aaa cca aag gcg cgg   1440
Val Leu Leu Lys Ala Tyr Val Asn Ala Thr Val Lys Pro Lys Ala Arg
465                 470                 475                 480

ata att ttt ggt ggt acg gtg att ggg agg tca cga gca ccg gag gtg   1488
Ile Ile Phe Gly Gly Thr Val Ile Gly Arg Ser Arg Ala Pro Glu Val
                485                 490                 495

gct cag ttt tca gct cga gga ccg agt tta gcc aat cct tcg ata cta   1536
Ala Gln Phe Ser Ala Arg Gly Pro Ser Leu Ala Asn Pro Ser Ile Leu
            500                 505                 510

aaa ccg gat atg att gct ccg gga gtc aat atc att gcg gct tgg cct   1584
Lys Pro Asp Met Ile Ala Pro Gly Val Asn Ile Ile Ala Ala Trp Pro
        515                 520                 525

caa aat cta gga cca acc gga ctt cct tat gat tca aga aga gtt aac   1632
Gln Asn Leu Gly Pro Thr Gly Leu Pro Tyr Asp Ser Arg Arg Val Asn
    530                 535                 540

ttc act gta atg tca gga act tca atg tct tgt cca cat gtt agc gga   1680
Phe Thr Val Met Ser Gly Thr Ser Met Ser Cys Pro His Val Ser Gly
545                 550                 555                 560

atc act gct ctt atc cgg tct gca tac ccg aac tgg tct cca gct gca   1728
Ile Thr Ala Leu Ile Arg Ser Ala Tyr Pro Asn Trp Ser Pro Ala Ala
                565                 570                 575

atc aaa tcc gca ttg atg aca aca gcg gat ttg tac gat cgt caa ggg   1776
Ile Lys Ser Ala Leu Met Thr Thr Ala Asp Leu Tyr Asp Arg Gln Gly
            580                 585                 590

aaa gcg ata aag gat ggt aac aaa cca gcc ggt gtg ttt gcg att gga   1824
Lys Ala Ile Lys Asp Gly Asn Lys Pro Ala Gly Val Phe Ala Ile Gly
        595                 600                 605

gca ggg cat gtg aat ccg caa aag gcg ata aac ccg gga ttg gtt tac   1872
Ala Gly His Val Asn Pro Gln Lys Ala Ile Asn Pro Gly Leu Val Tyr
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aac att caa cca gtg gat tac ata act tac ctc tgc act ctt gga ttc   1920
Asn Ile Gln Pro Val Asp Tyr Ile Thr Tyr Leu Cys Thr Leu Gly Phe
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aca aga tca gat att tta gca atc act cat aag aac gtg agc tgc aat   1968
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gcc gtg att ttc aaa cgt ggc aag act acg gag atg atc aca agg cgt   2064
Ala Val Ile Phe Lys Arg Gly Lys Thr Thr Glu Met Ile Thr Arg Arg
        675                 680                 685

gtc act aac gtt ggg agt cct aac tcg ata tac tca gtg aat gtc aag   2112
Val Thr Asn Val Gly Ser Pro Asn Ser Ile Tyr Ser Val Asn Val Lys
    690                 695                 700

gct cca gag ggg atc aaa gtt att gtc aat cct aag aga ctt gtg ttc   2160
Ala Pro Glu Gly Ile Lys Val Ile Val Asn Pro Lys Arg Leu Val Phe
705                 710                 715                 720

aaa cac gtg gat cag acg ctg agc tat aga gta tgg ttt gta ttg aag   2208
Lys His Val Asp Gln Thr Leu Ser Tyr Arg Val Trp Phe Val Leu Lys
                725                 730                 735

aag aaa aac aga gga ggg aag gtg gct agc ttt gca caa ggg cag ttg   2256
Lys Lys Asn Arg Gly Gly Lys Val Ala Ser Phe Ala Gln Gly Gln Leu
            740                 745                 750

act tgg gtc aac tct cat aat ctg atg cag cga gtt aga agt cca atc   2304
Thr Trp Val Asn Ser His Asn Leu Met Gln Arg Val Arg Ser Pro Ile
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tct gta acc ttg aag act aac tga                                  2328
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             20                  25                  30

His Pro Asn Ser Glu Thr Ala Lys Thr Phe Ala Ser Lys Phe Asp Trp
         35                  40                  45

His Leu Ser Phe Leu Gln Glu Ala Val Leu Gly Val Glu Glu Glu Glu
     50                  55                  60

Glu Glu Pro Ser Ser Arg Leu Leu Tyr Ser Tyr Gly Ser Ala Ile Glu
 65                  70                  75                  80

Gly Phe Ala Ala Gln Leu Thr Glu Ser Glu Ala Glu Ile Leu Arg Tyr
                 85                  90                  95

Ser Pro Glu Val Val Ala Val Arg Pro Asp His Val Leu Gln Val Gln
            100                 105                 110

Thr Thr Tyr Ser Tyr Lys Phe Leu Gly Leu Asp Gly Phe Gly Asn Ser
        115                 120                 125
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Gly Val Trp Ser Lys Ser Arg Phe Gly Gln Gly Thr Ile Ile Gly Val
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Leu Asp Thr Gly Val Trp Pro Glu Ser Pro Ser Phe Asp Asp Thr Gly
145 150 155 160

Met Pro Ser Ile Pro Arg Lys Trp Lys Gly Ile Cys Gln Glu Gly Glu
165 170 175

Ser Phe Ser Ser Ser Ser Cys Asn Arg Lys Leu Ile Gly Ala Arg Phe
180 185 190

Phe Ile Arg Gly His Arg Val Ala Asn Ser Pro Glu Glu Ser Pro Asn
195 200 205

Met Pro Arg Glu Tyr Ile Ser Ala Arg Asp Ser Thr Gly His Gly Thr
210 215 220

His Thr Ala Ser Thr Val Gly Gly Ser Ser Val Ser Met Ala Asn Val
225 230 235 240

Leu Gly Asn Gly Ala Gly Val Ala Arg Gly Met Ala Pro Gly Ala His
245 250 255

Ile Ala Val Tyr Lys Val Cys Trp Phe Asn Gly Cys Tyr Ser Ser Asp
260 265 270

Ile Leu Ala Ala Ile Asp Val Ala Ile Gln Asp Lys Val Asp Val Leu
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Ser Leu Ser Leu Gly Gly Phe Pro Ile Pro Leu Tyr Asp Asp Thr Ile
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Ala Ile Gly Thr Phe Arg Ala Met Glu Arg Gly Ile Ser Val Ile Cys
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Ala Ala Gly Asn Asn Gly Pro Ile Glu Ser Ser Val Ala Asn Thr Ala
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Pro Trp Val Ser Thr Ile Gly Ala Gly Thr Leu Asp Arg Arg Phe Pro
340 345 350

Ala Val Val Arg Leu Ala Asn Gly Lys Leu Leu Tyr Gly Glu Ser Leu
355 360 365

Tyr Pro Gly Lys Gly Ile Lys Asn Ala Gly Arg Glu Val Glu Val Ile
370 375 380

Tyr Val Thr Gly Gly Asp Lys Gly Ser Glu Phe Cys Leu Arg Gly Ser
385 390 395 400

Leu Pro Arg Glu Glu Ile Arg Gly Lys Met Val Ile Cys Asp Arg Gly
405 410 415

Val Asn Gly Arg Ser Glu Lys Gly Glu Ala Val Lys Glu Ala Gly Gly
420 425 430

Val Ala Met Ile Leu Ala Asn Thr Glu Ile Asn Gln Glu Glu Asp Ser
435 440 445

Ile Asp Val His Leu Leu Pro Ala Thr Leu Ile Gly Tyr Thr Glu Ser
450 455 460

Val Leu Leu Lys Ala Tyr Val Asn Ala Thr Val Lys Pro Lys Ala Arg
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Ile Ile Phe Gly Gly Thr Val Ile Gly Arg Ser Arg Ala Pro Glu Val
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Ala Gln Phe Ser Ala Arg Gly Pro Ser Leu Ala Asn Pro Ser Ile Leu
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Lys Pro Asp Met Ile Ala Pro Gly Val Asn Ile Ile Ala Ala Trp Pro
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Gln Asn Leu Gly Pro Thr Gly Leu Pro Tyr Asp Ser Arg Arg Val Asn
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Phe Thr Val Met Ser Gly Thr Ser Met Ser Cys Pro His Val Ser Gly
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Ile Thr Ala Leu Ile Arg Ser Ala Tyr Pro Asn Trp Ser Pro Ala Ala
565 570 575

Ile Lys Ser Ala Leu Met Thr Thr Ala Asp Leu Tyr Asp Arg Gln Gly
580 585 590

Lys Ala Ile Lys Asp Gly Asn Lys Pro Ala Gly Val Phe Ala Ile Gly
595 600 605

Ala Gly His Val Asn Pro Gln Lys Ala Ile Asn Pro Gly Leu Val Tyr
610 615 620

Asn Ile Gln Pro Val Asp Tyr Ile Thr Tyr Leu Cys Thr Leu Gly Phe
625 630 635 640

Thr Arg Ser Asp Ile Leu Ala Ile Thr His Lys Asn Val Ser Cys Asn
645 650 655

Gly Ile Leu Arg Lys Asn Pro Gly Phe Ser Leu Asn Tyr Pro Ser Ile
660 665 670

Ala Val Ile Phe Lys Arg Gly Lys Thr Thr Glu Met Ile Thr Arg Arg
675 680 685

Val Thr Asn Val Gly Ser Pro Asn Ser Ile Tyr Ser Val Asn Val Lys
690 695 700

Ala Pro Glu Gly Ile Lys Val Ile Val Asn Pro Lys Arg Leu Val Phe
705 710 715 720

Lys His Val Asp Gln Thr Leu Ser Tyr Arg Val Trp Phe Val Leu Lys
725 730 735

Lys Lys Asn Arg Gly Gly Lys Val Ala Ser Phe Ala Gln Gly Gln Leu
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Ser Val Thr Leu Lys Thr Asn
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  1               5                  10                  15

tct tct tcg tca gag atc ctg cag aag cag act tac att gtt cag ctt   96
Ser Ser Ser Ser Glu Ile Leu Gln Lys Gln Thr Tyr Ile Val Gln Leu
            20                  25                  30

cat cct aat agc gaa acc gct aaa acc ttt gcc tca aag ttt gat tgg  144
His Pro Asn Ser Glu Thr Ala Lys Thr Phe Ala Ser Lys Phe Asp Trp
        35                  40                  45

cat ctt tct ttt ctc caa gaa gcg gtt tta ggt gtt gaa gaa gaa gag  192
His Leu Ser Phe Leu Gln Glu Ala Val Leu Gly Val Glu Glu Glu Glu
    50                  55                  60

gaa gag cct tct tct cga ctt ctc tac tcc tat ggc tct gcg att gaa  240
Glu Glu Pro Ser Ser Arg Leu Leu Tyr Ser Tyr Gly Ser Ala Ile Glu
65                  70                  75                  80

gga ttt gct gct cag ttg act gaa tca gaa gcc gag ata ctg aga tat  288
Gly Phe Ala Ala Gln Leu Thr Glu Ser Glu Ala Glu Ile Leu Arg Tyr
                85                  90                  95

tca cct gaa gtt gtt gca gtg aga cct gac cat gtt ctt cag gtt caa  336
Ser Pro Glu Val Val Ala Val Arg Pro Asp His Val Leu Gln Val Gln
            100                 105                 110

acc act tac tct tac aag ttc ttg gga ctc gac ggt ttt gga aac tcc  384
Thr Thr Tyr Ser Tyr Lys Phe Leu Gly Leu Asp Gly Phe Gly Asn Ser
        115                 120                 125

ggt gta tgg tct aaa tct cgg ttt ggt caa ggc aca att atc ggc gtg  432
Gly Val Trp Ser Lys Ser Arg Phe Gly Gln Gly Thr Ile Ile Gly Val
    130                 135                 140

ctt gat act gga gtt tgg cct gaa agt cct agc ttt gac gat acc gga  480
Leu Asp Thr Gly Val Trp Pro Glu Ser Pro Ser Phe Asp Asp Thr Gly
145                 150                 155                 160

atg cct tcg att cca cgg aaa tgg aaa ggg att tgc caa gaa gga gaa  528
Met Pro Ser Ile Pro Arg Lys Trp Lys Gly Ile Cys Gln Glu Gly Glu
                165                 170                 175

agt ttc agt tct tcg agc tgt aac cgg aag cta atc ggt gct aga ttc  576
Ser Phe Ser Ser Ser Ser Cys Asn Arg Lys Leu Ile Gly Ala Arg Phe
            180                 185                 190

ttc atc aga gga cac cgt gtc gct aat tca cca gag gaa tca cca aac  624
Phe Ile Arg Gly His Arg Val Ala Asn Ser Pro Glu Glu Ser Pro Asn
        195                 200                 205

atg cct cgt gaa tac att tcc gca aga gat tca acg gga cac ggg act  672
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Met Pro Arg Glu Tyr Ile Ser Ala Arg Asp Ser Thr Gly His Gly Thr
    210                 215                 220

cac acc gcc tca aca gtt ggt gga tcc tct gtt tcg atg gcg aat gtt   720
His Thr Ala Ser Thr Val Gly Gly Ser Ser Val Ser Met Ala Asn Val
225                 230                 235                 240

ctt ggc aat gga gct ggt gtg gct cgt ggg atg gct cct gga gct cac   768
Leu Gly Asn Gly Ala Gly Val Ala Arg Gly Met Ala Pro Gly Ala His
                245                 250                 255

att gca gtc tat aaa gtc tgt tgg ttc aat ggt tgt tac agc tct gac   816
Ile Ala Val Tyr Lys Val Cys Trp Phe Asn Gly Cys Tyr Ser Ser Asp
            260                 265                 270

att cta gca gct ata gat gta gcg att caa gat aaa gtc gat gtt ctt   864
Ile Leu Ala Ala Ile Asp Val Ala Ile Gln Asp Lys Val Asp Val Leu
        275                 280                 285

tcg ctt tcc ctt ggc ggt ttc cct att cct ttg tat gat gac aca atc   912
Ser Leu Ser Leu Gly Gly Phe Pro Ile Pro Leu Tyr Asp Asp Thr Ile
    290                 295                 300

gcc att gga aca ttc cga gcc atg gaa cgc ggt ata tct gta atc tgt   960
Ala Ile Gly Thr Phe Arg Ala Met Glu Arg Gly Ile Ser Val Ile Cys
305                 310                 315                 320

gca gct ggt aac aac ggt cca atc gaa agc tct gtt gca aac aca gct  1008
Ala Ala Gly Asn Asn Gly Pro Ile Glu Ser Ser Val Ala Asn Thr Ala
                325                 330                 335

cct tgg gtc tca acc att ggc gca ggc acg ctt gat cga aga ttt ccc  1056
Pro Trp Val Ser Thr Ile Gly Ala Gly Thr Leu Asp Arg Arg Phe Pro
            340                 345                 350

gct gtg gtc aga tta gcc aac gga aag ctt ctc tat gga gag tca ttg  1104
Ala Val Val Arg Leu Ala Asn Gly Lys Leu Leu Tyr Gly Glu Ser Leu
        355                 360                 365

tat ccg gga aaa ggt ata aag aat gcc ggg aga gag gtt gag gtg att  1152
Tyr Pro Gly Lys Gly Ile Lys Asn Ala Gly Arg Glu Val Glu Val Ile
    370                 375                 380

tac gtc aca gga gga gat aaa gga agt gag ttc tgt ttg aga ggg tca  1200
Tyr Val Thr Gly Gly Asp Lys Gly Ser Glu Phe Cys Leu Arg Gly Ser
385                 390                 395                 400

ctt cca aga gaa gaa atc cga ggc aaa atg gtg att tgt gat cgc gga  1248
Leu Pro Arg Glu Glu Ile Arg Gly Lys Met Val Ile Cys Asp Arg Gly
                405                 410                 415

gtc aat gga aga tcg gag aaa gga gaa gcg gtt aaa gaa gct gga gga  1296
Val Asn Gly Arg Ser Glu Lys Gly Glu Ala Val Lys Glu Ala Gly Gly
            420                 425                 430

gtt gca atg atc tta gcc aat aca gag atc aac caa gaa gaa gat tct  1344
Val Ala Met Ile Leu Ala Asn Thr Glu Ile Asn Gln Glu Glu Asp Ser
        435                 440                 445

att gac gtt cat ctc tta cca gct aca ttg att ggt tac act gag tca  1392
Ile Asp Val His Leu Leu Pro Ala Thr Leu Ile Gly Tyr Thr Glu Ser
    450                 455                 460
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gtc ctt ctg aag gct tat gtt aat gcc acg gtg aaa cca aag gcg cgg   1440
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465                 470                 475                 480

ata att ttt ggt ggt acg gtg att ggg agg tca tgagcaccgg aggtggctca 1493
Ile Ile Phe Gly Gly Thr Val Ile Gly Arg Ser
                485                 490

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            20                  25                  30

His Pro Asn Ser Glu Thr Ala Lys Thr Phe Ala Ser Lys Phe Asp Trp
        35                  40                  45

His Leu Ser Phe Leu Gln Glu Ala Val Leu Gly Val Glu Glu Glu Glu
    50                  55                  60

Glu Glu Pro Ser Ser Arg Leu Leu Tyr Ser Tyr Gly Ser Ala Ile Glu
65                  70                  75                  80

Gly Phe Ala Ala Gln Leu Thr Glu Ser Glu Ala Glu Ile Leu Arg Tyr
                85                  90                  95

Ser Pro Glu Val Val Ala Val Arg Pro Asp His Val Leu Gln Val Gln
            100                 105                 110
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Thr Thr Tyr Ser Tyr Lys Phe Leu Gly Leu Asp Gly Phe Gly Asn Ser
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Gly Val Trp Ser Lys Ser Arg Phe Gly Gln Gly Thr Ile Ile Gly Val
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Leu Asp Thr Gly Val Trp Pro Glu Ser Pro Ser Phe Asp Asp Thr Gly
145                 150                 155                 160

Met Pro Ser Ile Pro Arg Lys Trp Lys Gly Ile Cys Gln Glu Gly Glu
                165                 170                 175

Ser Phe Ser Ser Ser Ser Cys Asn Arg Lys Leu Ile Gly Ala Arg Phe
            180                 185                 190

Phe Ile Arg Gly His Arg Val Ala Asn Ser Pro Glu Glu Ser Pro Asn
        195                 200                 205

Met Pro Arg Glu Tyr Ile Ser Ala Arg Asp Ser Thr Gly His Gly Thr
    210                 215                 220

His Thr Ala Ser Thr Val Gly Gly Ser Ser Val Ser Met Ala Asn Val
225                 230                 235                 240

Leu Gly Asn Gly Ala Gly Val Ala Arg Gly Met Ala Pro Gly Ala His
                245                 250                 255

Ile Ala Val Tyr Lys Val Cys Trp Phe Asn Gly Cys Tyr Ser Ser Asp
            260                 265                 270

Ile Leu Ala Ala Ile Asp Val Ala Ile Gln Asp Lys Val Asp Val Leu
        275                 280                 285

Ser Leu Ser Leu Gly Gly Phe Pro Ile Pro Leu Tyr Asp Asp Thr Ile
    290                 295                 300

Ala Ile Gly Thr Phe Arg Ala Met Glu Arg Gly Ile Ser Val Ile Cys
305                 310                 315                 320

Ala Ala Gly Asn Asn Gly Pro Ile Glu Ser Ser Val Ala Asn Thr Ala
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Pro Trp Val Ser Thr Ile Gly Ala Gly Thr Leu Asp Arg Arg Phe Pro
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Leu Pro Arg Glu Glu Ile Arg Gly Lys Met Val Ile Cys Asp Arg Gly
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Val Asn Gly Arg Ser Glu Lys Gly Glu Ala Val Lys Glu Ala Gly Gly
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aac att cca tta ttc aac ttc aaa tat aat tca atg gaa ctc aat ttc     95
Asn Ile Pro Leu Phe Asn Phe Lys Tyr Asn Ser Met Glu Leu Asn Phe
                20                  25                  30

caa ttc tat ttt ctc tgt ttt cta ctc tgt ttt att ccc ctg cta caa    143
Gln Phe Tyr Phe Leu Cys Phe Leu Leu Cys Phe Ile Pro Leu Leu Gln
            35                  40                  45

gct caa aat ttg caa act tat ata gta caa tta cat cca caa cat gca    191
Ala Gln Asn Leu Gln Thr Tyr Ile Val Gln Leu His Pro Gln His Ala
        50                  55                  60

tca aca aga acc cct ttt agt tct aaa ttt cag tgg cac ctt tca ttt    239
Ser Thr Arg Thr Pro Phe Ser Ser Lys Phe Gln Trp His Leu Ser Phe
    65                  70                  75

ctt gaa aat ttc aca aac att cca tta ttc aac ttc aaa tat att caa    287
Leu Glu Asn Phe Thr Asn Ile Pro Leu Phe Asn Phe Lys Tyr Ile Gln
80                  85                  90                  95

tgg aac tca att cca att cta ttt ctc tgt ttc tac tct gtt tat tcc    335
Trp Asn Ser Ile Pro Ile Leu Phe Leu Cys Phe Tyr Ser Val Tyr Ser
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cct gct aca agc att tcc tca ggt gaa aac tcg agt tct cgc ctt ttg    383
Pro Ala Thr Ser Ile Ser Ser Gly Glu Asn Ser Ser Ser Arg Leu Leu
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tac tct tac cat tct gca ttt gaa ggt ttt gca gca ctt cta tct gaa    431
Tyr Ser Tyr His Ser Ala Phe Glu Gly Phe Ala Ala Leu Leu Ser Glu
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aat gag cta aag gca ctg aag aaa tcg aat aat gtg tta tca ata tat    479
Asn Glu Leu Lys Ala Leu Lys Lys Ser Asn Asn Val Leu Ser Ile Tyr
    145                 150                 155

ccg gag agg aag ctt gag gtt caa aca act tat tct tac aag ttc tta    527
Pro Glu Arg Lys Leu Glu Val Gln Thr Thr Tyr Ser Tyr Lys Phe Leu
160                 165                 170                 175

gga ctt agt cct aca aag gaa ggt atgttacata gtttgtaata tatataaagt    581
Gly Leu Ser Pro Thr Lys Glu Gly
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ggc gcg atc att gga gtt ctt gat act gga att tgg cca gaa agt cca   1041
Gly Ala Ile Ile Gly Val Leu Asp Thr Gly Ile Trp Pro Glu Ser Pro
        195                 200                 205

agt ttt gtt gat cat gga atg tct cct att cca aag aaa tgg aaa ggt   1089
Ser Phe Val Asp His Gly Met Ser Pro Ile Pro Lys Lys Trp Lys Gly
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ntc tgc caa gaa gga aaa aac ttc aat tct tca agt tgc aat cgc aag   1137
Xaa Cys Gln Glu Gly Lys Asn Phe Asn Ser Ser Ser Cys Asn Arg Lys
225                 230                 235                 240

ctt att ggt gca agg ttt ttc cag ata gga cac atg atg gca tca aag   1185
Leu Ile Gly Ala Arg Phe Phe Gln Ile Gly His Met Met Ala Ser Lys
                245                 250                 255

aca tca aaa tca ata gat ttt atg gag gat tat gta tca cct cga gat   1233
Thr Ser Lys Ser Ile Asp Phe Met Glu Asp Tyr Val Ser Pro Arg Asp
            260                 265                 270

tct caa ggc cat ggt aca cat aca gca tct act gca ggg gga gct ccc   1281
Ser Gln Gly His Gly Thr His Thr Ala Ser Thr Ala Gly Gly Ala Pro
        275                 280                 285

gtt cca atg gcg agt gtg ctt gga aat gga gca gga gag gct cga ggg   1329
Val Pro Met Ala Ser Val Leu Gly Asn Gly Ala Gly Glu Ala Arg Gly
    290                 295                 300

atg gcc cct ggt gct cat atc gcg ata tac aaa gtt tgt tgg tct agt   1377
Met Ala Pro Gly Ala His Ile Ala Ile Tyr Lys Val Cys Trp Ser Ser
305                 310                 315                 320

ggt tgt tat agt tct gat ata ctt gca gca atg gat gta gct att aga   1425
Gly Cys Tyr Ser Ser Asp Ile Leu Ala Ala Met Asp Val Ala Ile Arg
                325                 330                 335

gat gga gta gac ata ttg tct ctt tca att ggt ggt ttc cct gtt cca   1473
Asp Gly Val Asp Ile Leu Ser Leu Ser Ile Gly Gly Phe Pro Val Pro
            340                 345                 350

ctt tat gag gat act att gct att ggc agt ttt cga gct atg gaa cgt   1521
Leu Tyr Glu Asp Thr Ile Ala Ile Gly Ser Phe Arg Ala Met Glu Arg
        355                 360                 365

gga att tca gtt ata tgt gct gca gga aat aat ggt cca att cta agt   1569
Gly Ile Ser Val Ile Cys Ala Ala Gly Asn Asn Gly Pro Ile Leu Ser
    370                 375                 380

tca gta gca aat gag gct cct tgg att gcc act att ggt gct agc aca   1617
Ser Val Ala Asn Glu Ala Pro Trp Ile Ala Thr Ile Gly Ala Ser Thr
385                 390                 395                 400

ctt gac agg aaa ttt cca gca ata att cag cta ggt atgtcacatt        1663
Leu Asp Arg Lys Phe Pro Ala Ile Ile Gln Leu Gly
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ggc aaa caa gtt cat aat tct cag aaa gtt ctt gag att gtt tat ctc    1820
Gly Lys Gln Val His Asn Ser Gln Lys Val Leu Glu Ile Val Tyr Leu
425                 430                 435                 440

aat gac ggt gat aat gga agt gaa ttt tgc tta aga ggg tct ctg cca    1868
Asn Asp Gly Asp Asn Gly Ser Glu Phe Cys Leu Arg Gly Ser Leu Pro
                445                 450                 455

aga gct aaa gtc cat gga aaa atc gtt gta tgt gat cgt gga gtt aat    1916
Arg Ala Lys Val His Gly Lys Ile Val Val Cys Asp Arg Gly Val Asn
            460                 465                 470

gga aga gca gag aaa ggt caa gtt gtt aaa gaa tca ggt ggt gtt gcc    1964
Gly Arg Ala Glu Lys Gly Gln Val Val Lys Glu Ser Gly Gly Val Ala
        475                 480                 485

atg atc cta gca aat aca gca gta aat atg gag gaa gat tct gtg gac    2012
Met Ile Leu Ala Asn Thr Ala Val Asn Met Glu Glu Asp Ser Val Asp
    490                 495                 500

gta cat gtc cta cct gca aca ttg att ggt ttt gac gaa tca att cag    2060
Val His Val Leu Pro Ala Thr Leu Ile Gly Phe Asp Glu Ser Ile Gln
505                 510                 515                 520

ttg caa agc tat atg aac tca acg cga aaa cca aca gct cga atc ata    2108
Leu Gln Ser Tyr Met Asn Ser Thr Arg Lys Pro Thr Ala Arg Ile Ile
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ttt gga gga aca gtt ata gga aaa tct agt gca cct gct gta gca caa    2156
Phe Gly Gly Thr Val Ile Gly Lys Ser Ser Ala Pro Ala Val Ala Gln
            540                 545                 550

ttt tct tca agg ggt cca agt ttt act gat cct tca att ctc aaa cct    2204
Phe Ser Ser Arg Gly Pro Ser Phe Thr Asp Pro Ser Ile Leu Lys Pro
        555                 560                 565

gat gtg att gct cca ggt cagtttttat tgaacccaca attatttatt          2252
Asp Val Ile Ala Pro Gly
    570

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tgaacctata tcttcgtata actcagaatc ttgaatccgc ctctgctcca ggt gtc    2488
                                                          Val
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aac ata att gct gct tgg ccg caa aat cta ggt cct agt ggc ctg gct    2536
Asn Ile Ile Ala Ala Trp Pro Gln Asn Leu Gly Pro Ser Gly Leu Ala
                580                 585                 590

gag gat tca aga aga gta aac ttc act gtc tta tca gga act tca atg    2584
Glu Asp Ser Arg Arg Val Asn Phe Thr Val Leu Ser Gly Thr Ser Met
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gct tgt cct cat gtt agt ggc att gct gca cta ctc cat tca att cat    2632
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cct aaa tgg tca cca gct gca atc aaa tcc gcg cta atg aca act gca  2680
Pro Lys Trp Ser Pro Ala Ala Ile Lys Ser Ala Leu Met Thr Thr Ala
    625                 630                 635

gac aca aca aac cac caa gga aaa cca atc atg gat ggt gac aca cga  2728
Asp Thr Thr Asn His Gln Gly Lys Pro Ile Met Asp Gly Asp Thr Arg
640                 645                 650                 655

gct gga ctt ttc gcc ata gga gct gga cat gta aat cct gga aga tcc  2776
Ala Gly Leu Phe Ala Ile Gly Ala Gly His Val Asn Pro Gly Arg Ser
                660                 665                 670

gat gat ccc gga ttg ata tat gac att aat gca aat gac tat atc act  2824
Asp Asp Pro Gly Leu Ile Tyr Asp Ile Asn Ala Asn Asp Tyr Ile Thr
            675                 680                 685

cac ctt tgc act att ggt tac aaa aac tct gaa atc ctc agc att act  2872
His Leu Cys Thr Ile Gly Tyr Lys Asn Ser Glu Ile Leu Ser Ile Thr
        690                 695                 700

cac aag aat gtt agc tgc cac gac gtt tta cag aaa aac agg ggt ttt  2920
His Lys Asn Val Ser Cys His Asp Val Leu Gln Lys Asn Arg Gly Phe
    705                 710                 715

agt ctc aat tac ccc tct att tcc gta atc ttt aag gca gga aaa acg  2968
Ser Leu Asn Tyr Pro Ser Ile Ser Val Ile Phe Lys Ala Gly Lys Thr
720                 725                 730                 735

aga aaa atg atc aca agg aga gtg aca aat gtg ggg agt cct aat tca  3016
Arg Lys Met Ile Thr Arg Arg Val Thr Asn Val Gly Ser Pro Asn Ser
                740                 745                 750

atc tac tca gtt gaa att gtg gca cca gaa gga gtt aaa gtg aga gtt  3064
Ile Tyr Ser Val Glu Ile Val Ala Pro Glu Gly Val Lys Val Arg Val
            755                 760                 765

aaa ccg cga cgt ctg gta ttt aaa cat gtt aat caa agt tta agt tac  3112
Lys Pro Arg Arg Leu Val Phe Lys His Val Asn Gln Ser Leu Ser Tyr
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aga gtt tgg ttt ata tca agg aag aga att ggg act caa agg aga agc  3160
Arg Val Trp Phe Ile Ser Arg Lys Arg Ile Gly Thr Gln Arg Arg Ser
    785                 790                 795

ttt gca gaa gga caa ttg atg tgg atc aac tcc aga gat aaa tac cag  3208
Phe Ala Glu Gly Gln Leu Met Trp Ile Asn Ser Arg Asp Lys Tyr Gln
800                 805                 810                 815

aaa gtt aga agt cct att tca gtt gca tgg gca tca aag aag tga       3253
Lys Val Arg Ser Pro Ile Ser Val Ala Trp Ala Ser Lys Lys
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Phe Tyr Phe Leu Cys Phe Leu Leu Cys Phe Ile Pro Leu Leu Gln Ala
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Gln Asn Leu Gln Thr Tyr Ile Val Gln Leu His Pro Gln His Ala Ser
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Thr Arg Thr Pro Phe Ser Ser Lys Phe Gln Trp His Leu Ser Phe Leu
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Glu Asn Phe Thr Asn Ile Pro Leu Phe Asn Phe Lys Tyr Ile Gln Trp
85 90 95

Asn Ser Ile Pro Ile Leu Phe Leu Cys Phe Tyr Ser Val Tyr Ser Pro
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Ala Thr Ser Ile Ser Ser Gly Glu Asn Ser Ser Ser Arg Leu Leu Tyr
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Ser Tyr His Ser Ala Phe Glu Gly Phe Ala Ala Leu Leu Ser Glu Asn
130 135 140

Glu Leu Lys Ala Leu Lys Lys Ser Asn Asn Val Leu Ser Ile Tyr Pro
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Glu Arg Lys Leu Glu Val Gln Thr Thr Tyr Ser Tyr Lys Phe Leu Gly
165 170 175

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Gly Ala Ile Ile Gly Val Leu Asp Thr Gly Ile Trp Pro Glu Ser Pro
195 200 205

Ser Phe Val Asp His Gly Met Ser Pro Ile Pro Lys Lys Trp Lys Gly
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Thr Ser Lys Ser Ile Asp Phe Met Glu Asp Tyr Val Ser Pro Arg Asp
            260                 265                 270

Ser Gln Gly His Gly Thr His Thr Ala Ser Thr Ala Gly Gly Ala Pro
        275                 280                 285

Val Pro Met Ala Ser Val Leu Gly Asn Gly Ala Gly Glu Ala Arg Gly
    290                 295                 300

Met Ala Pro Gly Ala His Ile Ala Ile Tyr Lys Val Cys Trp Ser Ser
305                 310                 315                 320

Gly Cys Tyr Ser Ser Asp Ile Leu Ala Ala Met Asp Val Ala Ile Arg
                325                 330                 335

Asp Gly Val Asp Ile Leu Ser Leu Ser Ile Gly Gly Phe Pro Val Pro
            340                 345                 350

Leu Tyr Glu Asp Thr Ile Ala Ile Gly Ser Phe Arg Ala Met Glu Arg
        355                 360                 365

Gly Ile Ser Val Ile Cys Ala Ala Gly Asn Asn Gly Pro Ile Leu Ser
    370                 375                 380

Ser Val Ala Asn Glu Ala Pro Trp Ile Ala Thr Ile Gly Ala Ser Thr
385                 390                 395                 400

Leu Asp Arg Lys Phe Pro Ala Ile Ile Gln Leu Gly Asn Gly Lys Tyr
                405                 410                 415

Val Tyr Gly Glu Ser Leu Tyr Pro Gly Lys Gln Val His Asn Ser Gln
            420                 425                 430

Lys Val Leu Glu Ile Val Tyr Leu Asn Asp Gly Asp Asn Gly Ser Glu
        435                 440                 445

Phe Cys Leu Arg Gly Ser Leu Pro Arg Ala Lys Val His Gly Lys Ile
    450                 455                 460

Val Val Cys Asp Arg Gly Val Asn Gly Arg Ala Glu Lys Gly Gln Val
465                 470                 475                 480

Val Lys Glu Ser Gly Gly Val Ala Met Ile Leu Ala Asn Thr Ala Val
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Asn Met Glu Glu Asp Ser Val Asp Val His Val Leu Pro Ala Thr Leu
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Ile Gly Phe Asp Glu Ser Ile Gln Leu Gln Ser Tyr Met Asn Ser Thr
        515                 520                 525

Arg Lys Pro Thr Ala Arg Ile Ile Phe Gly Gly Thr Val Ile Gly Lys
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Ser Ser Ala Pro Ala Val Ala Gln Phe Ser Ser Arg Gly Pro Ser Phe
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Asp Ser Arg Arg Val Asn Phe Thr Val Leu Ser Gly Thr Ser Met Ala
        595                 600                 605

Cys Pro His Val Ser Gly Ile Ala Ala Leu Leu His Ser Ile His Pro
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Lys Trp Ser Pro Ala Ala Ile Lys Ser Ala Leu Met Thr Thr Ala Asp
625                 630                 635                 640

Thr Thr Asn His Gln Gly Lys Pro Ile Met Asp Gly Asp Thr Arg Ala
                645                 650                 655

Gly Leu Phe Ala Ile Gly Ala Gly His Val Asn Pro Gly Arg Ser Asp
            660                 665                 670

Asp Pro Gly Leu Ile Tyr Asp Ile Asn Ala Asn Asp Tyr Ile Thr His
        675                 680                 685

Leu Cys Thr Ile Gly Tyr Lys Asn Ser Glu Ile Leu Ser Ile Thr His
    690                 695                 700

Lys Asn Val Ser Cys His Asp Val Leu Gln Lys Asn Arg Gly Phe Ser
705                 710                 715                 720

Leu Asn Tyr Pro Ser Ile Ser Val Ile Phe Lys Ala Gly Lys Thr Arg
                725                 730                 735

Lys Met Ile Thr Arg Arg Val Thr Asn Val Gly Ser Pro Asn Ser Ile
            740                 745                 750

Tyr Ser Val Glu Ile Val Ala Pro Glu Gly Val Lys Val Arg Val Lys
        755                 760                 765

Pro Arg Arg Leu Val Phe Lys His Val Asn Gln Ser Leu Ser Tyr Arg
    770                 775                 780

Val Trp Phe Ile Ser Arg Lys Arg Ile Gly Thr Gln Arg Arg Ser Phe
785                 790                 795                 800

Ala Glu Gly Gln Leu Met Trp Ile Asn Ser Arg Asp Lys Tyr Gln Lys
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   Ile Leu Phe Asn Pro Phe Lys Tyr Pro His Gln Ile Ile Ser Thr
     1               5                  10                  15

aac att cca tta ttc aac ttc aaa tat aat tca atg gaa ctc aat ttc    95
Asn Ile Pro Leu Phe Asn Phe Lys Tyr Asn Ser Met Glu Leu Asn Phe
                20                  25                  30

caa ttc tat ttt ctc tgt ttt cta ctc tgt ttt att ccc ctg cta caa   143
Gln Phe Tyr Phe Leu Cys Phe Leu Leu Cys Phe Ile Pro Leu Leu Gln
            35                  40                  45

gct caa aat ttg caa act tat ata gta caa tta cat cca caa cat gca   191
Ala Gln Asn Leu Gln Thr Tyr Ile Val Gln Leu His Pro Gln His Ala
        50                  55                  60

tca aca aga acc cct ttt agt tct aaa ttt cag tgg cac ctt tca ttt   239
Ser Thr Arg Thr Pro Phe Ser Ser Lys Phe Gln Trp His Leu Ser Phe
    65                  70                  75

ctt gaa aat ttc aca aac att cca tta ttc aac ttc aaa tat att caa   287
Leu Glu Asn Phe Thr Asn Ile Pro Leu Phe Asn Phe Lys Tyr Ile Gln
80                  85                  90                  95

tgg aac tca att cca att cta ttt ctc tgt ttc tac tct gtt tat tcc   335
Trp Asn Ser Ile Pro Ile Leu Phe Leu Cys Phe Tyr Ser Val Tyr Ser
                100                 105                 110

cct gct aca agc att tcc tca ggt gaa aac tcg agt tct cgc ctt ttg   383
Pro Ala Thr Ser Ile Ser Ser Gly Glu Asn Ser Ser Ser Arg Leu Leu
            115                 120                 125

tac tct tac cat tct gca ttt gaa ggt ttt gca gca ctt cta tct gaa   431
Tyr Ser Tyr His Ser Ala Phe Glu Gly Phe Ala Ala Leu Leu Ser Glu
        130                 135                 140

aat gag cta aag gca ctg aag aaa tcg aat aat gtg tta tca ata tat   479
Asn Glu Leu Lys Ala Leu Lys Lys Ser Asn Asn Val Leu Ser Ile Tyr
    145                 150                 155

ccg gag agg aag ctt gag gtt caa aca act tat tct tac aag ttc tta   527
Pro Glu Arg Lys Leu Glu Val Gln Thr Thr Tyr Ser Tyr Lys Phe Leu
160                 165                 170                 175

gga ctt agt cct aca aag gaa ggt act tgg tta aag tct gga ttt ggt   575
Gly Leu Ser Pro Thr Lys Glu Gly Thr Trp Leu Lys Ser Gly Phe Gly
                180                 185                 190

cga ggc gcg atc att gga gtt ctt gat act gga att tgg cca gaa agt   623
Arg Gly Ala Ile Ile Gly Val Leu Asp Thr Gly Ile Trp Pro Glu Ser
            195                 200                 205

cca agt ttt gtt gat cat gga atg tct cct att cca aag aaa tgg aaa   671
Pro Ser Phe Val Asp His Gly Met Ser Pro Ile Pro Lys Lys Trp Lys
        210                 215                 220

ggt ntc tgc caa gaa gga aaa aac ttc aat tct tca agt tgc aat cgc   719
Gly Xaa Cys Gln Glu Gly Lys Asn Phe Asn Ser Ser Ser Cys Asn Arg
    225                 230                 235

aag ctt att ggt gca agg ttt ttc cag ata gga cac atg atg gca tca   767
Lys Leu Ile Gly Ala Arg Phe Phe Gln Ile Gly His Met Met Ala Ser
240                 245                 250                 255
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aag aca tca aaa tca ata gat ttt atg gag gat tat gta tca cct cga   815
Lys Thr Ser Lys Ser Ile Asp Phe Met Glu Asp Tyr Val Ser Pro Arg
                260                 265                 270

gat tct caa ggc cat ggt aca cat aca gca tct act gca ggg gga gct   863
Asp Ser Gln Gly His Gly Thr His Thr Ala Ser Thr Ala Gly Gly Ala
            275                 280                 285

ccc gtt cca atg gcg agt gtg ctt gga aat gga gca gga gag gct cga   911
Pro Val Pro Met Ala Ser Val Leu Gly Asn Gly Ala Gly Glu Ala Arg
        290                 295                 300

ggg atg gcc cct ggt gct cat atc gcg ata tac aaa gtt tgt tgg tct   959
Gly Met Ala Pro Gly Ala His Ile Ala Ile Tyr Lys Val Cys Trp Ser
    305                 310                 315

agt ggt tgt tat agt tct gat ata ctt gca gca atg gat gta gct att   1007
Ser Gly Cys Tyr Ser Ser Asp Ile Leu Ala Ala Met Asp Val Ala Ile
320                 325                 330                 335

aga gat gga gta gac ata ttg tct ctt tca att ggt ggt ttc cct gtt   1055
Arg Asp Gly Val Asp Ile Leu Ser Leu Ser Ile Gly Gly Phe Pro Val
                340                 345                 350

cca ctt tat gag gat act att gct att ggc agt ttt cga gct atg gaa   1103
Pro Leu Tyr Glu Asp Thr Ile Ala Ile Gly Ser Phe Arg Ala Met Glu
            355                 360                 365

cgt gga att tca gtt ata tgt gct gca gga aat aat ggt cca att cta   1151
Arg Gly Ile Ser Val Ile Cys Ala Ala Gly Asn Asn Gly Pro Ile Leu
        370                 375                 380

agt tca gta gca aat gag gct cct tgg att gcc act att ggt gct agc   1199
Ser Ser Val Ala Asn Glu Ala Pro Trp Ile Ala Thr Ile Gly Ala Ser
    385                 390                 395

aca ctt gac agg aaa ttt cca gca ata att cag cta ggt aat ggc aag   1247
Thr Leu Asp Arg Lys Phe Pro Ala Ile Ile Gln Leu Gly Asn Gly Lys
400                 405                 410                 415

tat gtg tat gga gaa tcc ttg tac ccg ggc aaa caa gtt cat aat tct   1295
Tyr Val Tyr Gly Glu Ser Leu Tyr Pro Gly Lys Gln Val His Asn Ser
                420                 425                 430

cag aaa gtt ctt gag att gtt tat ctc aat gac ggt gat aat gga agt   1343
Gln Lys Val Leu Glu Ile Val Tyr Leu Asn Asp Gly Asp Asn Gly Ser
            435                 440                 445

gaa ttt tgc tta aga ggg tct ctg cca aga gct aaa gtc cat gga aaa   1391
Glu Phe Cys Leu Arg Gly Ser Leu Pro Arg Ala Lys Val His Gly Lys
        450                 455                 460

atc gtt gta tgt gat cgt gga gtt aat gga aga gca gag aaa ggt caa   1439
Ile Val Val Cys Asp Arg Gly Val Asn Gly Arg Ala Glu Lys Gly Gln
    465                 470                 475

gtt gtt aaa gaa tca ggt ggt gtt gcc atg atc cta gca aat aca gca   1487
Val Val Lys Glu Ser Gly Gly Val Ala Met Ile Leu Ala Asn Thr Ala
480                 485                 490                 495

gta aat atg gag gaa gat tct gtg gac gta cat gtc cta cct gca aca   1535
Val Asn Met Glu Glu Asp Ser Val Asp Val His Val Leu Pro Ala Thr
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                500                 505                 510

ttg att ggt ttt gac gaa tca att cag ttg caa agc tat atg aac tca   1583
Leu Ile Gly Phe Asp Glu Ser Ile Gln Leu Gln Ser Tyr Met Asn Ser
            515                 520                 525

acg cga aaa cca aca gct cga atc ata ttt gga gga aca gtt ata gga   1631
Thr Arg Lys Pro Thr Ala Arg Ile Ile Phe Gly Gly Thr Val Ile Gly
        530                 535                 540

aaa tct agt gca cct gct gta gca caa ttt tct tca agg ggt cca agt   1679
Lys Ser Ser Ala Pro Ala Val Ala Gln Phe Ser Ser Arg Gly Pro Ser
    545                 550                 555

ttt act gat cct tca att ctc aaa cct gat gtg att gct cca ggt gtc   1727
Phe Thr Asp Pro Ser Ile Leu Lys Pro Asp Val Ile Ala Pro Gly Val
560                 565                 570                 575

aac ata att gct gct tgg ccg caa aat cta ggt cct agt ggc ctg gct   1775
Asn Ile Ile Ala Ala Trp Pro Gln Asn Leu Gly Pro Ser Gly Leu Ala
                580                 585                 590

gag gat tca aga aga gta aac ttc act gtc tta tca gga act tca atg   1823
Glu Asp Ser Arg Arg Val Asn Phe Thr Val Leu Ser Gly Thr Ser Met
            595                 600                 605

gct tgt cct cat gtt agt ggc att gct gca cta ctc cat tca att cat   1871
Ala Cys Pro His Val Ser Gly Ile Ala Ala Leu Leu His Ser Ile His
        610                 615                 620

cct aaa tgg tca cca gct gca atc aaa tcc gcg cta atg aca act gca   1919
Pro Lys Trp Ser Pro Ala Ala Ile Lys Ser Ala Leu Met Thr Thr Ala
    625                 630                 635

gac aca aca aac cac caa gga aaa cca atc atg gat ggt gac aca cga   1967
Asp Thr Thr Asn His Gln Gly Lys Pro Ile Met Asp Gly Asp Thr Arg
640                 645                 650                 655

gct gga ctt ttc gcc ata gga gct gga cat gta aat cct gga aga tcc   2015
Ala Gly Leu Phe Ala Ile Gly Ala Gly His Val Asn Pro Gly Arg Ser
                660                 665                 670

gat gat ccc gga ttg ata tat gac att aat gca aat gac tat atc act   2063
Asp Asp Pro Gly Leu Ile Tyr Asp Ile Asn Ala Asn Asp Tyr Ile Thr
            675                 680                 685

cac ctt tgc act att ggt tac aaa aac tct gaa atc ctc agc att act   2111
His Leu Cys Thr Ile Gly Tyr Lys Asn Ser Glu Ile Leu Ser Ile Thr
        690                 695                 700

cac aag aat gtt agc tgc cac gac gtt tta cag aaa aac agg ggt ttt   2159
His Lys Asn Val Ser Cys His Asp Val Leu Gln Lys Asn Arg Gly Phe
    705                 710                 715

agt ctc aat tac ccc tct att tcc gta atc ttt aag gca gga aaa acg   2207
Ser Leu Asn Tyr Pro Ser Ile Ser Val Ile Phe Lys Ala Gly Lys Thr
720                 725                 730                 735

aga aaa atg atc aca agg aga gtg aca aat gtg ggg agt cct aat tca   2255
Arg Lys Met Ile Thr Arg Arg Val Thr Asn Val Gly Ser Pro Asn Ser
                740                 745                 750

atc tac tca gtt gaa att gtg gca cca gaa gga gtt aaa gtg aga gtt   2303
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Ile Tyr Ser Val Glu Ile Val Ala Pro Glu Gly Val Lys Val Arg Val
            755                 760                 765

aaa ccg cga cgt ctg gta ttt aaa cat gtt aat caa agt tta agt tac   2351
Lys Pro Arg Arg Leu Val Phe Lys His Val Asn Gln Ser Leu Ser Tyr
        770                 775                 780

aga gtt tgg ttt ata tca agg aag aga att ggg act caa agg aga agc   2399
Arg Val Trp Phe Ile Ser Arg Lys Arg Ile Gly Thr Gln Arg Arg Ser
    785                 790                 795

ttt gca gaa gga caa ttg atg tgg atc aac tcc aga gat aaa tac cag   2447
Phe Ala Glu Gly Gln Leu Met Trp Ile Asn Ser Arg Asp Lys Tyr Gln
800                 805                 810                 815

aaa gtt aga agt cct att tca gtt gca tgg gca tca aag aag tga       2492
Lys Val Arg Ser Pro Ile Ser Val Ala Trp Ala Ser Lys Lys
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<213> Solanum tuberosum

<400> 10

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Ile Pro Leu Phe Asn Phe Lys Tyr Asn Ser Met Glu Leu Asn Phe Gln
            20                  25                  30

Phe Tyr Phe Leu Cys Phe Leu Leu Cys Phe Ile Pro Leu Leu Gln Ala
        35                  40                  45

Gln Asn Leu Gln Thr Tyr Ile Val Gln Leu His Pro Gln His Ala Ser
    50                  55                  60

Thr Arg Thr Pro Phe Ser Ser Lys Phe Gln Trp His Leu Ser Phe Leu
65                  70                  75                  80

Glu Asn Phe Thr Asn Ile Pro Leu Phe Asn Phe Lys Tyr Ile Gln Trp
                85                  90                  95

Asn Ser Ile Pro Ile Leu Phe Leu Cys Phe Tyr Ser Val Tyr Ser Pro
            100                 105                 110

Ala Thr Ser Ile Ser Ser Gly Glu Asn Ser Ser Ser Arg Leu Leu Tyr
        115                 120                 125

Ser Tyr His Ser Ala Phe Glu Gly Phe Ala Ala Leu Leu Ser Glu Asn
    130                 135                 140

Glu Leu Lys Ala Leu Lys Lys Ser Asn Asn Val Leu Ser Ile Tyr Pro
145                 150                 155                 160

Glu Arg Lys Leu Glu Val Gln Thr Thr Tyr Ser Tyr Lys Phe Leu Gly
                165                 170                 175

Leu Ser Pro Thr Lys Glu Gly Thr Trp Leu Lys Ser Gly Phe Gly Arg
            180                 185                 190

Gly Ala Ile Ile Gly Val Leu Asp Thr Gly Ile Trp Pro Glu Ser Pro
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        195                 200                 205

Ser Phe Val Asp His Gly Met Ser Pro Ile Pro Lys Lys Trp Lys Gly
    210                 215                 220

Xaa Cys Gln Glu Gly Lys Asn Phe Asn Ser Ser Ser Cys Asn Arg Lys
225                 230                 235                 240

Leu Ile Gly Ala Arg Phe Phe Gln Ile Gly His Met Met Ala Ser Lys
                245                 250                 255

Thr Ser Lys Ser Ile Asp Phe Met Glu Asp Tyr Val Ser Pro Arg Asp
            260                 265                 270

Ser Gln Gly His Gly Thr His Thr Ala Ser Thr Ala Gly Gly Ala Pro
        275                 280                 285

Val Pro Met Ala Ser Val Leu Gly Asn Gly Ala Gly Glu Ala Arg Gly
    290                 295                 300

Met Ala Pro Gly Ala His Ile Ala Ile Tyr Lys Val Cys Trp Ser Ser
305                 310                 315                 320

Gly Cys Tyr Ser Ser Asp Ile Leu Ala Ala Met Asp Val Ala Ile Arg
                325                 330                 335

Asp Gly Val Asp Ile Leu Ser Leu Ser Ile Gly Gly Phe Pro Val Pro
            340                 345                 350

Leu Tyr Glu Asp Thr Ile Ala Ile Gly Ser Phe Arg Ala Met Glu Arg
        355                 360                 365

Gly Ile Ser Val Ile Cys Ala Ala Gly Asn Asn Gly Pro Ile Leu Ser
    370                 375                 380

Ser Val Ala Asn Glu Ala Pro Trp Ile Ala Thr Ile Gly Ala Ser Thr
385                 390                 395                 400

Leu Asp Arg Lys Phe Pro Ala Ile Ile Gln Leu Gly Asn Gly Lys Tyr
                405                 410                 415

Val Tyr Gly Glu Ser Leu Tyr Pro Gly Lys Gln Val His Asn Ser Gln
            420                 425                 430

Lys Val Leu Glu Ile Val Tyr Leu Asn Asp Gly Asp Asn Gly Ser Glu
        435                 440                 445

Phe Cys Leu Arg Gly Ser Leu Pro Arg Ala Lys Val His Gly Lys Ile
    450                 455                 460

Val Val Cys Asp Arg Gly Val Asn Gly Arg Ala Glu Lys Gly Gln Val
465                 470                 475                 480

Val Lys Glu Ser Gly Gly Val Ala Met Ile Leu Ala Asn Thr Ala Val
                485                 490                 495

Asn Met Glu Glu Asp Ser Val Asp Val His Val Leu Pro Ala Thr Leu
            500                 505                 510

Ile Gly Phe Asp Glu Ser Ile Gln Leu Gln Ser Tyr Met Asn Ser Thr
        515                 520                 525

Arg Lys Pro Thr Ala Arg Ile Ile Phe Gly Gly Thr Val Ile Gly Lys
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530 535 540

Ser Ser Ala Pro Ala Val Ala Gln Phe Ser Ser Arg Gly Pro Ser Phe
545 550 555 560

Thr Asp Pro Ser Ile Leu Lys Pro Asp Val Ile Ala Pro Gly Val Asn
565 570 575

Ile Ile Ala Ala Trp Pro Gln Asn Leu Gly Pro Ser Gly Leu Ala Glu
580 585 590

Asp Ser Arg Arg Val Asn Phe Thr Val Leu Ser Gly Thr Ser Met Ala
595 600 605

Cys Pro His Val Ser Gly Ile Ala Ala Leu Leu His Ser Ile His Pro
610 615 620

Lys Trp Ser Pro Ala Ala Ile Lys Ser Ala Leu Met Thr Thr Ala Asp
625 630 635 640

Thr Thr Asn His Gln Gly Lys Pro Ile Met Asp Gly Asp Thr Arg Ala
645 650 655

Gly Leu Phe Ala Ile Gly Ala Gly His Val Asn Pro Gly Arg Ser Asp
660 665 670

Asp Pro Gly Leu Ile Tyr Asp Ile Asn Ala Asn Asp Tyr Ile Thr His
675 680 685

Leu Cys Thr Ile Gly Tyr Lys Asn Ser Glu Ile Leu Ser Ile Thr His
690 695 700

Lys Asn Val Ser Cys His Asp Val Leu Gln Lys Asn Arg Gly Phe Ser
705 710 715 720

Leu Asn Tyr Pro Ser Ile Ser Val Ile Phe Lys Ala Gly Lys Thr Arg
725 730 735

Lys Met Ile Thr Arg Arg Val Thr Asn Val Gly Ser Pro Asn Ser Ile
740 745 750

Tyr Ser Val Glu Ile Val Ala Pro Glu Gly Val Lys Val Arg Val Lys
755 760 765

Pro Arg Arg Leu Val Phe Lys His Val Asn Gln Ser Leu Ser Tyr Arg
770 775 780

Val Trp Phe Ile Ser Arg Lys Arg Ile Gly Thr Gln Arg Arg Ser Phe
785 790 795 800

Ala Glu Gly Gln Leu Met Trp Ile Asn Ser Arg Asp Lys Tyr Gln Lys
805 810 815

Val Arg Ser Pro Ile Ser Val Ala Trp Ala Ser Lys Lys
820 825

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  1               5                  10                  15

caa gct caa gat ttg caa act tac ata gtt cag tta cat cca cat gga   96
Gln Ala Gln Asp Leu Gln Thr Tyr Ile Val Gln Leu His Pro His Gly
            20                  25                  30

gca aca aga ccc cct ttt agc tct aaa cta caa tgg cac ctt tct ttc   144
Ala Thr Arg Pro Pro Phe Ser Ser Lys Leu Gln Trp His Leu Ser Phe
        35                  40                  45

ctt gca aaa gca gtt tcc tct gga gaa caa gac tcg tct tct cgt ctt   192
Leu Ala Lys Ala Val Ser Ser Gly Glu Gln Asp Ser Ser Ser Arg Leu
    50                  55                  60

ttg tac tct tac cat tct gcg atg gaa ggt ttt gca gct cga ctc act   240
Leu Tyr Ser Tyr His Ser Ala Met Glu Gly Phe Ala Ala Arg Leu Thr
65                  70                  75                  80

gaa gat gag gtt gag ttg tta agg gaa tct aat gat gtg ttg tcg ata   288
Glu Asp Glu Val Glu Leu Leu Arg Glu Ser Asn Asp Val Leu Ser Ile
                85                  90                  95

cgt gct gag agg agg ctt gaa att cag act act tat tct tac aag ttc   336
Arg Ala Glu Arg Arg Leu Glu Ile Gln Thr Thr Tyr Ser Tyr Lys Phe
            100                 105                 110

ttg gga tta agt cca acg aga gaa gga gct tgg ttg aag tct gga ttt   384
Leu Gly Leu Ser Pro Thr Arg Glu Gly Ala Trp Leu Lys Ser Gly Phe
        115                 120                 125

ggt cga ggg gcg atc att gga gtg ttg gat act gga gtt tgg cca gaa   432
Gly Arg Gly Ala Ile Ile Gly Val Leu Asp Thr Gly Val Trp Pro Glu
    130                 135                 140

agt cca agt ttt gat gat cat ggg atg cca cct gct cca cag aag tgg   480
Ser Pro Ser Phe Asp Asp His Gly Met Pro Pro Ala Pro Gln Lys Trp
145                 150                 155                 160

agg ggt gtc tgc caa gga gga cag gat ttt aat tct tct agt tgt aat   528
Arg Gly Val Cys Gln Gly Gly Gln Asp Phe Asn Ser Ser Ser Cys Asn
                165                 170                 175

cgc aag ctt att ggt gca agg ttt ttc aga aaa gga cat cgt gtg gct   576
Arg Lys Leu Ile Gly Ala Arg Phe Phe Arg Lys Gly His Arg Val Ala
            180                 185                 190

tca atg aca tca tca cca gat gca gtg gag gaa tat gtg tcg cca cgg   624
Ser Met Thr Ser Ser Pro Asp Ala Val Glu Glu Tyr Val Ser Pro Arg
        195                 200                 205

gat tcc cat ggc cat ggt aca cat aca gca tcc act gct gga gga gct   672
Asp Ser His Gly His Gly Thr His Thr Ala Ser Thr Ala Gly Gly Ala
    210                 215                 220

gca gtt cca ttg gct ggt gtg ctc gga aat gga gca ggg gag gct cga   720
Ala Val Pro Leu Ala Gly Val Leu Gly Asn Gly Ala Gly Glu Ala Arg
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225                 230                 235                 240

ggg atg gcc ccg ggt gcc cac att gca ata tat aaa gta tgc tgg ttc   768
Gly Met Ala Pro Gly Ala His Ile Ala Ile Tyr Lys Val Cys Trp Phe
                245                 250                 255

agt ggt tgt tac agc tct gat ata ctt gca gca atg gat gtg gcc atc   816
Ser Gly Cys Tyr Ser Ser Asp Ile Leu Ala Ala Met Asp Val Ala Ile
            260                 265                 270

aga gat gga gta gac ata ttg tca ctc tca ctt ggt ggc ttc cct att   864
Arg Asp Gly Val Asp Ile Leu Ser Leu Ser Leu Gly Gly Phe Pro Ile
        275                 280                 285

cca ctt tat gat gat act att gcc att gga agt ttc cga gcc atg gag   912
Pro Leu Tyr Asp Asp Thr Ile Ala Ile Gly Ser Phe Arg Ala Met Glu
    290                 295                 300

cat gga att tca gtt ata tgt gct gca ggg aat aat gga cca atc caa   960
His Gly Ile Ser Val Ile Cys Ala Ala Gly Asn Asn Gly Pro Ile Gln
305                 310                 315                 320

agt tca gta gcc aac ggt gct cct tgg att gcc act att ggt gct agc  1008
Ser Ser Val Ala Asn Gly Ala Pro Trp Ile Ala Thr Ile Gly Ala Ser
                325                 330                 335

aca ctt gac agg aga ttt cca gcg tca gtt cag tta ggc aac gga aag  1056
Thr Leu Asp Arg Arg Phe Pro Ala Ser Val Gln Leu Gly Asn Gly Lys
            340                 345                 350

ttc ctg tac gga gaa tcc ttg tac cct ggg aag aaa gtt cct agc tct  1104
Phe Leu Tyr Gly Glu Ser Leu Tyr Pro Gly Lys Lys Val Pro Ser Ser
        355                 360                 365

cag aag aat ctt gag atc gtt tat gta aag gat aag gac aag gga agt  1152
Gln Lys Asn Leu Glu Ile Val Tyr Val Lys Asp Lys Asp Lys Gly Ser
    370                 375                 380

gaa ttt tgc ttg aga gga tcg cta tca aaa gca caa gtc cga ggg aaa  1200
Glu Phe Cys Leu Arg Gly Ser Leu Ser Lys Ala Gln Val Arg Gly Lys
385                 390                 395                 400

atg gtt gtg tgt gat agg gga gtc aat gga agg gca gaa aaa ggc cag  1248
Met Val Val Cys Asp Arg Gly Val Asn Gly Arg Ala Glu Lys Gly Gln
                405                 410                 415

gtt gtg aag gag gca ggt ggt gct gcc atg atc tta gca aat aca gca  1296
Val Val Lys Glu Ala Gly Gly Ala Ala Met Ile Leu Ala Asn Thr Ala
            420                 425                 430

ata aat atg gag gaa gat tcc att gat gtc cat gtc ctc cca gca acg  1344
Ile Asn Met Glu Glu Asp Ser Ile Asp Val His Val Leu Pro Ala Thr
        435                 440                 445

ttg att ggc ttc gat gaa tca att caa tta caa aac tac ctg aac tca  1392
Leu Ile Gly Phe Asp Glu Ser Ile Gln Leu Gln Asn Tyr Leu Asn Ser
    450                 455                 460

aca aaa aga cca aca gct cga ttc ata ttt gga gga acg gta ata gga  1440
Thr Lys Arg Pro Thr Ala Arg Phe Ile Phe Gly Gly Thr Val Ile Gly
465                 470                 475                 480

aag tct aga gca cct gca gta gct cag ttt tcg tca agg ggg cca agc  1488
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Lys Ser Arg Ala Pro Ala Val Ala Gln Phe Ser Ser Arg Gly Pro Ser
                485                 490                 495

tat act gat cct tca att ctc aaa cct gat ttg att gct cca ggg gta   1536
Tyr Thr Asp Pro Ser Ile Leu Lys Pro Asp Leu Ile Ala Pro Gly Val
            500                 505                 510

aac ata att gcc gct tgg cca caa aac tta ggc ccc agt ggt ctt ccc   1584
Asn Ile Ile Ala Ala Trp Pro Gln Asn Leu Gly Pro Ser Gly Leu Pro
        515                 520                 525

gaa gat tca cga aga gta aat ttc act gtt atg tca ggg acc tca atg   1632
Glu Asp Ser Arg Arg Val Asn Phe Thr Val Met Ser Gly Thr Ser Met
    530                 535                 540

gca tgt cct cat gta agt gga att gcc gca ttg ctc cat tca gct cat   1680
Ala Cys Pro His Val Ser Gly Ile Ala Ala Leu Leu His Ser Ala His
545                 550                 555                 560

cct aaa tgg act cca gca gca ata aga tcc gca tta atg acc act gca   1728
Pro Lys Trp Thr Pro Ala Ala Ile Arg Ser Ala Leu Met Thr Thr Ala
                565                 570                 575

gat aca gct gat cat atg gga aaa cca atc atg gat gga gat gca cca   1776
Asp Thr Ala Asp His Met Gly Lys Pro Ile Met Asp Gly Asp Ala Pro
            580                 585                 590

gct aaa ctt ttt gca gct gga gct gga cac gtg aac cct gga aga gcc   1824
Ala Lys Leu Phe Ala Ala Gly Ala Gly His Val Asn Pro Gly Arg Ala
        595                 600                 605

atc gat cct gga ttg ata tat gac atc cag gtt gat gaa tat atc act   1872
Ile Asp Pro Gly Leu Ile Tyr Asp Ile Gln Val Asp Glu Tyr Ile Thr
    610                 615                 620

cat ctt tgc act atc gga tac aga aat tct gaa gtc ttc agc att act   1920
His Leu Cys Thr Ile Gly Tyr Arg Asn Ser Glu Val Phe Ser Ile Thr
625                 630                 635                 640

cat agg aat gtc agc tgc cat gac att tta cag aac aac agg ggt ttc   1968
His Arg Asn Val Ser Cys His Asp Ile Leu Gln Asn Asn Arg Gly Phe
                645                 650                 655

agc cta aat tac ccc tca att tca ata act ttc aga gca gga atg act   2016
Ser Leu Asn Tyr Pro Ser Ile Ser Ile Thr Phe Arg Ala Gly Met Thr
            660                 665                 670

aga aag ata atc aag agg aga gta aca aat gtg ggg aac cct aac tct   2064
Arg Lys Ile Ile Lys Arg Arg Val Thr Asn Val Gly Asn Pro Asn Ser
        675                 680                 685

att tac tca gtt gac att gag gca cct gag gga gtc aaa gtg aga gtg   2112
Ile Tyr Ser Val Asp Ile Glu Ala Pro Glu Gly Val Lys Val Arg Val
    690                 695                 700

aag cca cgt cgt ctg ata ttt aaa cat gtg aac caa agc tta agc tat   2160
Lys Pro Arg Arg Leu Ile Phe Lys His Val Asn Gln Ser Leu Ser Tyr
705                 710                 715                 720

aga gtt tgg ttt ata tca cga aag awa ata gag tct aaa agg atg agc   2208
Arg Val Trp Phe Ile Ser Arg Lys Xaa Ile Glu Ser Lys Arg Met Ser
                725                 730                 735
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ttt gca gag ggg caa ttg aca tgg ttc aat gta gga aac aaa gcc acg   2256
Phe Ala Glu Gly Gln Leu Thr Trp Phe Asn Val Gly Asn Lys Ala Thr
            740                 745                 750

aaa gtt aaa agt cct att tcc gtc aca tgg gca tca atg aag           2298
Lys Val Lys Ser Pro Ile Ser Val Thr Trp Ala Ser Met Lys
        755                 760                 765

tgatcactat caccactatc acaagcacca tatatttcat tgtcttagtt caaaatttcc 2358

aattaggaat ttcacatcac attataaatt gatgttagag cagatacact ttatctttcc 2418

acaaagaaga aatgatcgat aatcattgaa atgatttgtg ttttactaag tagatgtgtc 2478

tccacaatgt taagaagtat taatatgtat aaatagatta gacaaagcac gagattgcgc 2538

ctgagtgagg nattttctca agtttacacc ttttgaacta aattactcat aaaccagtat 2598

gacagacaaa aaattcaaga aattggcgag gcaaaagaaa acatacaata taatctcaac 2658

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caaacttagc attgacatca actgacgtta gaacccctte ttcgtcaatc atgtagaatc 2838

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tagccatacc atttgtccat cccttgactt tgttaatttc acatctggta ttgtttgctc 2958

atcagttcct tgtatgaact gaatttttgg ttgaaccatc attatacata gtctggacat 3018

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ca                                                                3140
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Gln Ala Gln Asp Leu Gln Thr Tyr Ile Val Gln Leu His Pro His Gly
             20                  25                  30

Ala Thr Arg Pro Pro Phe Ser Ser Lys Leu Gln Trp His Leu Ser Phe
         35                  40                  45

Leu Ala Lys Ala Val Ser Ser Gly Glu Gln Asp Ser Ser Ser Arg Leu
     50                  55                  60

Leu Tyr Ser Tyr His Ser Ala Met Glu Gly Phe Ala Ala Arg Leu Thr
 65                  70                  75                  80

Glu Asp Glu Val Glu Leu Leu Arg Glu Ser Asn Asp Val Leu Ser Ile
                 85                  90                  95
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Arg Ala Glu Arg Arg Leu Glu Ile Gln Thr Thr Tyr Ser Tyr Lys Phe
            100                 105                 110

Leu Gly Leu Ser Pro Thr Arg Glu Gly Ala Trp Leu Lys Ser Gly Phe
        115                 120                 125

Gly Arg Gly Ala Ile Ile Gly Val Leu Asp Thr Gly Val Trp Pro Glu
    130                 135                 140

Ser Pro Ser Phe Asp Asp His Gly Met Pro Pro Ala Pro Gln Lys Trp
145                 150                 155                 160

Arg Gly Val Cys Gln Gly Gly Gln Asp Phe Asn Ser Ser Ser Cys Asn
                165                 170                 175

Arg Lys Leu Ile Gly Ala Arg Phe Phe Arg Lys Gly His Arg Val Ala
            180                 185                 190

Ser Met Thr Ser Ser Pro Asp Ala Val Glu Glu Tyr Val Ser Pro Arg
        195                 200                 205

Asp Ser His Gly His Gly Thr His Thr Ala Ser Thr Ala Gly Gly Ala
    210                 215                 220

Ala Val Pro Leu Ala Gly Val Leu Gly Asn Gly Ala Gly Glu Ala Arg
225                 230                 235                 240

Gly Met Ala Pro Gly Ala His Ile Ala Ile Tyr Lys Val Cys Trp Phe
                245                 250                 255

Ser Gly Cys Tyr Ser Ser Asp Ile Leu Ala Ala Met Asp Val Ala Ile
            260                 265                 270

Arg Asp Gly Val Asp Ile Leu Ser Leu Ser Leu Gly Gly Phe Pro Ile
        275                 280                 285

Pro Leu Tyr Asp Asp Thr Ile Ala Ile Gly Ser Phe Arg Ala Met Glu
    290                 295                 300

His Gly Ile Ser Val Ile Cys Ala Ala Gly Asn Asn Gly Pro Ile Gln
305                 310                 315                 320

Ser Ser Val Ala Asn Gly Ala Pro Trp Ile Ala Thr Ile Gly Ala Ser
                325                 330                 335

Thr Leu Asp Arg Arg Phe Pro Ala Ser Val Gln Leu Gly Asn Gly Lys
            340                 345                 350

Phe Leu Tyr Gly Glu Ser Leu Tyr Pro Gly Lys Lys Val Pro Ser Ser
        355                 360                 365

Gln Lys Asn Leu Glu Ile Val Tyr Val Lys Asp Lys Asp Lys Gly Ser
    370                 375                 380

Glu Phe Cys Leu Arg Gly Ser Leu Ser Lys Ala Gln Val Arg Gly Lys
385                 390                 395                 400

Met Val Val Cys Asp Arg Gly Val Asn Gly Arg Ala Glu Lys Gly Gln
                405                 410                 415

Val Val Lys Glu Ala Gly Gly Ala Ala Met Ile Leu Ala Asn Thr Ala
            420                 425                 430
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```
Ile Asn Met Glu Glu Asp Ser Ile Asp Val His Val Leu Pro Ala Thr
        435                 440                 445

Leu Ile Gly Phe Asp Glu Ser Ile Gln Leu Gln Asn Tyr Leu Asn Ser
    450                 455                 460

Thr Lys Arg Pro Thr Ala Arg Phe Ile Phe Gly Gly Thr Val Ile Gly
465                 470                 475                 480

Lys Ser Arg Ala Pro Ala Val Ala Gln Phe Ser Ser Arg Gly Pro Ser
                485                 490                 495

Tyr Thr Asp Pro Ser Ile Leu Lys Pro Asp Leu Ile Ala Pro Gly Val
            500                 505                 510

Asn Ile Ile Ala Ala Trp Pro Gln Asn Leu Gly Pro Ser Gly Leu Pro
        515                 520                 525

Glu Asp Ser Arg Arg Val Asn Phe Thr Val Met Ser Gly Thr Ser Met
    530                 535                 540

Ala Cys Pro His Val Ser Gly Ile Ala Ala Leu Leu His Ser Ala His
545                 550                 555                 560

Pro Lys Trp Thr Pro Ala Ala Ile Arg Ser Ala Leu Met Thr Thr Ala
                565                 570                 575

Asp Thr Ala Asp His Met Gly Lys Pro Ile Met Asp Gly Asp Ala Pro
            580                 585                 590

Ala Lys Leu Phe Ala Ala Gly Ala Gly His Val Asn Pro Gly Arg Ala
        595                 600                 605

Ile Asp Pro Gly Leu Ile Tyr Asp Ile Gln Val Asp Glu Tyr Ile Thr
    610                 615                 620

His Leu Cys Thr Ile Gly Tyr Arg Asn Ser Glu Val Phe Ser Ile Thr
625                 630                 635                 640

His Arg Asn Val Ser Cys His Asp Ile Leu Gln Asn Asn Arg Gly Phe
                645                 650                 655

Ser Leu Asn Tyr Pro Ser Ile Ser Ile Thr Phe Arg Ala Gly Met Thr
            660                 665                 670

Arg Lys Ile Ile Lys Arg Arg Val Thr Asn Val Gly Asn Pro Asn Ser
        675                 680                 685

Ile Tyr Ser Val Asp Ile Glu Ala Pro Glu Gly Val Lys Val Arg Val
    690                 695                 700

Lys Pro Arg Arg Leu Ile Phe Lys His Val Asn Gln Ser Leu Ser Tyr
705                 710                 715                 720

Arg Val Trp Phe Ile Ser Arg Lys Xaa Ile Glu Ser Lys Arg Met Ser
                725                 730                 735

Phe Ala Glu Gly Gln Leu Thr Trp Phe Asn Val Gly Asn Lys Ala Thr
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Lys Val Lys Ser Pro Ile Ser Val Thr Trp Ala Ser Met Lys
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